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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	09/904,579
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Applicant:	Koichi KAMIJO
Group Art Unit:	Not yet assigned
Examiner:	Not yet assigned
Title:	LIQUID CRYSTAL DEVICE, COLOR FILTER SUBSTRATE, METHOD FOR MANUFACTURING LIQUID CRYSTAL DEVICE, AND METHOD FOR MANUFACTURING COLOR FILTER SUBSTRATE
Attorney Docket:	9319S-000246

Commissioner of Patents and Trademarks
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to the examination of this application, please amend it as follows.

IN THE SPECIFICATION

Please replace the specification with the attached substitute specification. Applicant also includes herewith a marked up version showing the changes made to the specification. Pursuant to 37 CFR 1.125(b)(1), no new matter has been added.

IN THE CLAIMS

Please amend the claims in accordance with the following rewritten claims in clean form. Applicant includes herewith an Attachment for Claim Amendments showing a marked up version of each amended claim.

1. (Amended) A liquid crystal device comprising:

a first substrate;

a second substrate disposed so as to oppose the first substrate;

a color layer provided on the first substrate;

an insulating film provided on the color layer and comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component; and

a conductive film having a property of transmitting light provided on the insulating film.

2. (Amended) A liquid crystal device according to Claim 1, wherein, when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

3. (Amended) A liquid crystal device according to Claim 2, wherein λ is 550 nm.

4. (Amended) A liquid crystal device according to Claim 1, further comprising a transparent resin film between the color layer and the insulating film.

5. (Amended) A liquid crystal device according to Claim 1, further comprising a reflective film between the color layer and the first substrate.

6. (Amended) A liquid crystal device according to Claim 1, further comprising an underlying layer provided on the second substrate and composed of a material substantially identical to that for the insulating film, and an active element provided on the underlying layer.

7. (Amended) A liquid crystal device according to Claim 5, wherein the reflective layer has an opening portion therein.

8. (Amended) A liquid crystal device according to Claim 6, wherein the active element is a TFD.

9. (Amended) A liquid crystal device comprising:

a first substrate;

a second substrate disposed so as to oppose the first substrate;

a color layer provided on the first substrate;

an insulating film provided on the color layer and comprising Ta_2O_5 as a primary component; and

a conductive film having a property of transmitting light provided on the insulating film.

10. (Amended) A liquid crystal device according to Claim 9, wherein the insulating film further comprises at least one of ZrO_2, TiO_2, and SiO_2 as a component.

11. (Amended) A liquid crystal device according to Claim 10, wherein, when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

12. (Amended) A liquid crystal device according to Claim 11, wherein λ is 550 nm.

13. (Amended) A liquid crystal device according to Claim 9, further comprising a transparent resin film provided between the color layer and the insulating film.

14. (Amended) A liquid crystal device according to Claim 9, further comprising a reflective film provided between the color layer and the first substrate.

15. (Amended) A liquid crystal device according to Claim 9, further comprising an underlying layer provided on the second substrate and composed of a material substantially identical to that for the insulating film, and an active element provided on the underlying layer.

16. (Amended) A liquid crystal device according to Claim 14, wherein the reflective layer has an opening portion therein.

17. (Amended) A liquid crystal device according to Claim 15, wherein the active element is a TFD.

18. (Amended) A liquid crystal device comprising:

an insulating film comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component; and

a conductive film having a property of transmitting light provided on the insulating film.

19. (Amended) A liquid crystal device according to Claim 18, wherein, when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

20. (Amended) A liquid crystal device according to Claim 19, wherein λ is 550 nm.

21. (Amended) A liquid crystal device comprising:

a first substrate;

a second substrate disposed so as to oppose the first substrate;

a color layer provided on the first substrate;

an insulating film provided on the color layer, having a property of transmitting light, a refractive index of 1.6 to 2.0 in a visible wavelength region, and a thickness of 10 nm to 100 nm; and

a conductive film provided on the insulating film, having the property of transmitting light, a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

22. (Amended) A liquid crystal device according to Claim 21, wherein, when an optional wavelength in the visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

23. (Amended) A liquid crystal device comprising:

an insulating film having a refractive index of 1.6 to 2.0 in a visible wavelength region and a thickness of 10 nm to 100 nm; and

a conductive film provided on the insulating film, having a property of transmitting light, a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

24. (Amended) A liquid crystal device according to Claim 23, wherein, when an optional wavelength in the visible wavelength region is represented by λ, a sum of an

optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

25. (Amended) A color filter substrate comprising:

a substrate;

a color layer provided on the substrate;

an insulating film provided on the color layer and comprising one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component; and

a conductive film having a property of transmitting light provided on the insulating film.

26. (Amended) A color filter substrate according to Claim 25, wherein, when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

27. (Amended) A color filter substrate according to Claim 26, wherein λ is 550 nm.

28. (Amended) A color filter substrate according to Claim 25, further comprising a transparent resin film provided between the color layer and the insulating film.

29. (Amended) A color filter substrate according to Claim 25, further comprising a reflective film provided between the color layer and the first substrate.

30. (Amended) A color filter substrate according to Claim 29, wherein the reflective layer has an opening portion therein.

31. (Amended) A color filter substrate comprising:

a substrate;

a color layer provided on the substrate;

an insulating film provided on the color layer and comprising Ta_2O_5 as a primary component; and

a conductive film having a property of transmitting light provided on the insulating film.

32. (Amended) A color filter substrate according to Claim 31, wherein the insulating film further comprises at least one of ZrO_2, TiO_2, and SiO_2 as a component.

33. (Amended) A color filter substrate according to Claim 32, wherein, when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

34. (Amended) A color filter substrate according to Claim 33, wherein λ is 550 nm.

35. (Amended) A color filter substrate according to Claim 31, further comprising a transparent resin film provided between the color layer and the insulating film.

36. (Amended) A color filter substrate according to Claim 31, further comprising a reflective film provided between the color layer and the first substrate.

37. (Amended) A liquid crystal device according to Claim 36, wherein the reflective layer has an opening portion therein.

38. (Amended) A color filter substrate comprising:

a substrate;

a color layer provided on the substrate;

an insulating film provided on the color layer, having a property of transmitting light, a refractive index of 1.6 to 2.0 in a visible wavelength region, and a thickness of 10 nm to 100 nm; and

a conductive film provided on the insulating film, having the property of transmitting light, a refractive index of 1.8 to 1.9, and a thickness of 100 nm to 300 nm.

39. (Amended) A color filter substrate according to Claim 38, wherein, when an optional wavelength in the visible wavelength region is represented by λ, a sum of an

optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

40. (Amended) A method for manufacturing a liquid crystal device, comprising:

a step of forming a color layer on a first substrate;

a step of forming an insulating film on the color layer, the insulating film comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component;

a step of forming a conductive film having a property of transmitting light on the insulating film; and

a step of patterning the conductive film by using an alkaline solution.

41. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, wherein the insulating film and the conductive film are formed so that when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and an optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

42. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, further comprising a step of forming a transparent resin film on the color layer.

43. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, further comprising a step of forming a reflective film on the first substrate.

44. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, further comprising: a step of forming an underlying layer on a second substrate, the underlying layer comprising a material substantially identical to that for the insulating film; and a step of forming an active element on the underlying layer.

45. (Amended) A method for manufacturing a liquid crystal device, according to Claim 43, further comprising a step of forming an opening portion in the reflective film.

46. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, wherein the insulating film is formed by vapor phase film-forming means.

47. (Amended) A method for manufacturing a liquid crystal device, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film comprising Ta_2O_5 as a primary component and at least one of ZrO_2, TiO_2, and SiO_2 as a component;

a step of forming a conductive film having a property of transmitting light on the insulating film; and

a step of patterning the conductive film by using an alkaline solution.

48. (Amended) A method for manufacturing a liquid crystal device, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film having a property of transmitting light , a refractive index of 1.6 to 2.0 in a visible wavelength region, and a thickness of 10 nm to 100 nm; and

a step of forming a conductive film on the insulating film, the conductive film having the property of transmitting light , a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

49. (Amended) A method for manufacturing a color filter substrate, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component;

a step of forming a conductive film having a property of transmitting light on the insulating film; and

a step of patterning the conductive film by using an alkaline solution.

50. (Amended) A method for manufacturing a color filter substrate according to Claim 49, wherein the insulating film and the conductive film are formed so that when an optional wavelength in a visible wavelength region is represented by λ, a sum of an optical thickness of the insulating film and the optical thickness of the conductive film is substantially equal to a product of $\lambda/2$ and a natural number.

51. (Amended) A method for manufacturing a color filter substrate according to Claim 49, further comprising a step of forming a transparent resin film on the color layer.

52. (Amended) A method for manufacturing a color filter substrate according to Claim 49, further comprising a step of forming a reflective film on the substrate.

53. (Amended) A method for manufacturing a color filter substrate according to Claim 52, further comprising a step of forming an opening portion in the reflective film.

54. (Amended) A method for manufacturing a color filter substrate according to Claim 49, wherein the insulating film is formed by vapor phase film-forming means.

55. (Amended) A method for manufacturing a color filter substrate, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film having a property of transmitting light , a refractive index of 1.6 to 2.0 in a visible wavelength region, and a thickness of 10 nm to 100 nm; and

a step of forming a conductive film on the insulating film; the conductive film having the property of transmitting light, a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

REMARKS

The purpose of this preliminary amendment is to clarify the translation and to amend the claims. No new matter has been added. Favorable consideration of this application is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: Oct 29, 2001

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ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and strike-throughs indicate deletions.

~~[Claim 1]~~ 1. (Amended) A liquid crystal device comprising:

a first substrate;

a second substrate disposed so as to oppose the first substrate;

a color layer provided on the first substrate;

an insulating film provided on the color layer and comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component; and

a conductive film having a~~the~~ property of transmitting light provided on the insulating film.

~~[Claim 2]~~ 2. (Amended) A liquid crystal device according to Claim 1, wherein, when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

~~[Claim 3]~~ 3. (Amended) A liquid crystal device according to Claim 2, wherein λ is 550 nm.

~~[Claim 4]~~ 4. (Amended) A liquid crystal device according to Claim 1, further comprising a transparent resin film between the color layer and the insulating film.

[~~Claim 5~~] 5. (Amended) A liquid crystal device according to Claim 1, further comprising a reflective film between the color layer and the first substrate.

[~~Claim 6~~] 6. (Amended) A liquid crystal device according to Claim 1, further comprising an underlying layer provided on the second substrate and composed of a material substantially identical to that for the insulating film, and an active element provided on the underlying layer.

[~~Claim 7~~] 7. (Amended) A liquid crystal device according to Claim 5, wherein the reflective layer has an opening portion therein.

[~~Claim 8~~] 8. (Amended) A liquid crystal device according to Claim 6, wherein the active element is a TFD.

[~~Claim 9~~] 9. (Amended) A liquid crystal device comprising:

a first substrate;

a second substrate disposed so as to oppose the first substrate;

a color layer provided on the first substrate;

an insulating film provided on the color layer and comprising Ta_2O_5 as a primary component; and

a conductive film having a~~the~~ property of transmitting light provided on the insulating film.

[~~Claim 10~~] 10. (Amended) A liquid crystal device according to Claim 9, wherein the insulating film further comprises at least one of ZrO_2, TiO_2, and SiO_2 as a component.

[~~Claim 11~~] 11. (Amended) A liquid crystal device according to Claim 10, wherein, when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

[~~Claim 12~~] 12. (Amended) A liquid crystal device according to Claim 11, wherein λ is 550 nm.

[~~Claim 13~~] 13. (Amended) A liquid crystal device according to Claim 9, further comprising a transparent resin film [~~provided~~] between the color layer and the insulating film.

[~~Claim 14~~] 14. (Amended) A liquid crystal device according to Claim 9, further comprising a reflective film [~~provided~~] between the color layer and the first substrate.

[~~Claim 15~~] 15. (Amended) A liquid crystal device according to Claim 9, further comprising an underlying layer provided on the second substrate and composed of a material substantially identical to that for the insulating film, and an active element provided on the underlying layer.

[~~Claim 16~~] 16. (Amended) A liquid crystal device according to Claim 14, wherein the reflective layer has an opening portion therein.

[~~Claim 17~~] 17. (Amended) A liquid crystal device according to Claim 15, wherein the active element is a TFD.

[~~Claim 18~~] 18. (Amended) A liquid crystal device comprising:

an insulating film comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component; and

a conductive film having a~~the~~ property of transmitting light provided on the insulating film.

[~~Claim 19~~] 19. (Amended) A liquid crystal device according to Claim 18, wherein, when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

[~~Claim 20~~] 20. (Amended) A liquid crystal device according to Claim 19, wherein λ is 550 nm.

[~~Claim 21~~] 21. (Amended) A liquid crystal device comprising:

a first substrate;

a second substrate disposed so as to oppose the first substrate;

a color layer provided on the first substrate;

an insulating film ~~[~~provided~~]~~ on the color layer, having a~~the~~ property of transmitting light, a refractive index of 1.6 to 2.0 in a~~the~~ visible wavelength region, and a thickness of 10 nm to 100 nm; and

a conductive film provided on the insulating film, having the property of transmitting light, a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

~~[Claim 22]~~ 22. (Amended) A liquid crystal device according to Claim 21, wherein, when an optional wavelength in the visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

~~[Claim 23]~~ 23. (Amended) A liquid crystal device comprising:

an insulating film having a refractive index of 1.6 to 2.0 in a~~the~~ visible wavelength region and a thickness of 10 nm to 100 nm; and

a conductive film provided on the insulating film, having a~~the~~ property of transmitting light, a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

~~[Claim 24]~~ 24. (Amended) A liquid crystal device according to Claim 23, wherein, when an optional wavelength in the visible wavelength region is represented by λ, a~~the~~

sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

~~[Claim 25]~~ 25. (Amended) A color filter substrate comprising:

a substrate;

a color layer provided on the substrate;

an insulating film provided on the color layer and comprising one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component; and

a conductive film having a~~the~~ property of transmitting light provided on the insulating film.

~~[Claim 26]~~ 26. (Amended) A color filter substrate according to Claim 25, wherein, when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

~~[Claim 27]~~ 27. (Amended) A color filter substrate according to Claim 26, wherein λ is 550 nm.

~~[Claim 28]~~ 28. (Amended) A color filter substrate according to Claim 25, further comprising a transparent resin film ~~[~~provided~~]~~ between the color layer and the insulating film.

[~~Claim 29~~] 29. (Amended) A color filter substrate according to Claim 25, further comprising a reflective film [~~provided~~] between the color layer and the first substrate.

[~~Claim 30~~] 30. (Amended) A color filter substrate according to Claim 29, wherein the reflective layer has an opening portion therein.

[~~Claim 31~~] 31. (Amended) A color filter substrate comprising:

a substrate;

a color layer provided on the substrate;

an insulating film provided on the color layer and comprising Ta_2O_5 as a primary component; and

a conductive film having a~~the~~ property of transmitting light provided on the insulating film.

[~~Claim 32~~] 32. (Amended) A color filter substrate according to Claim 31, wherein the insulating film further comprises at least one of ZrO_2, TiO_2, and SiO_2 as a component.

[~~Claim 33~~] 33. (Amended) A color filter substrate according to Claim 32, wherein, when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

[~~Claim 34~~] 34. (Amended) A color filter substrate according to Claim 33, wherein λ is 550 nm.

[~~Claim 35~~] 35. (Amended) A color filter substrate according to Claim 31, further comprising a transparent resin film [~~provided~~] between the color layer and the insulating film.

[~~Claim 36~~] 36. (Amended) A color filter substrate according to Claim 31, further comprising a reflective film [~~provided~~] between the color layer and the first substrate.

[~~Claim 37~~] 37. (Amended) A liquid crystal device according to Claim 36, wherein the reflective layer has an opening portion therein.

[~~Claim 38~~] 38. (Amended) A color filter substrate comprising:

a substrate;

a color layer provided on the substrate;

an insulating film provided on the color layer, having a~~the~~ property of transmitting light, a refractive index of 1.6 to 2.0 in a~~the~~ visible wavelength region, and a thickness of 10 nm to 100 nm; and

a conductive film provided on the insulating film, having the property of transmitting light, a refractive index of 1.8 to 1.9, and a thickness of 100 nm to 300 nm.

[~~Claim 39~~] 39. (Amended) A color filter substrate according to Claim 38, wherein, when an optional wavelength in the visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

[~~Claim 40~~] 40. (Amended) A method for manufacturing a liquid crystal device, comprising:

a step of forming a color layer on a first substrate;

a step of forming an insulating film on the color layer, the insulating film comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component;

a step of forming a conductive film having a~~the~~ property of transmitting light on the insulating film; and

a step of patterning the conductive film by using an alkaline solution.

[~~Claim 41~~] 41. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, wherein the insulating film and the conductive film are formed so that when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and an~~the~~ optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

[~~Claim 42~~] 42. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, further comprising a step of forming a transparent resin film on the color layer.

[~~Claim 43~~] 43. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, further comprising a step of forming a reflective film on the first substrate.

[~~Claim 44~~] 44. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, further comprising: a step of forming an underlying layer on a second substrate, the underlying layer comprising a material substantially identical to that for the insulating film; and a step of forming an active element on the underlying layer.

[~~Claim 45~~] 45. (Amended) A method for manufacturing a liquid crystal device, according to Claim 43, further comprising a step of forming an opening portion in the reflective film.

[~~Claim 46~~] 46. (Amended) A method for manufacturing a liquid crystal device, according to Claim 40, wherein the insulating film is formed by vapor phase film-forming means.

[~~Claim 47~~] 47. (Amended) A method for manufacturing a liquid crystal device, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film comprising Ta_2O_5 as a primary component and at least one of ZrO_2, TiO_2, and SiO_2 as a component;

a step of forming a conductive film having a~~the~~ property of transmitting light on the insulating film; and

a step of patterning the conductive film by using an alkaline solution.

~~[Claim 48]~~ 48. (Amended) A method for manufacturing a liquid crystal device, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film having a~~the~~ property of transmitting light , a refractive index of 1.6 to 2.0 in a~~the~~ visible wavelength region, and a thickness of 10 nm to 100 nm; and

a step of forming a conductive film on the insulating film, the conductive film having the property of transmitting light , a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.

~~[Claim 49]~~ 49. (Amended) A method for manufacturing a color filter substrate, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film comprising at least one of Ta_2O_5, ZrO_2, and TiO_2 as a primary component;

a step of forming a conductive film having a~~the~~ property of transmitting light on the insulating film; and

a step of patterning the conductive film by using an alkaline solution.

~~[Claim 50]~~ 50. (Amended) A method for manufacturing a color filter substrate according to Claim 49, wherein the insulating film and the conductive film are formed so that when an optional wavelength in a~~the~~ visible wavelength region is represented by λ, a~~the~~ sum of an~~the~~ optical thickness of the insulating film and the optical thickness of the conductive film is substantially equal to a~~the~~ product of $\lambda/2$ and a natural number.

~~[Claim 51]~~ 51. (Amended) A method for manufacturing a color filter substrate according to Claim 49, further comprising a step of forming a transparent resin film on the color layer.

~~[Claim 52]~~ 52. (Amended) A method for manufacturing a color filter substrate according to Claim 49, further comprising a step of forming a reflective film on the substrate.

~~[Claim 53]~~ 53. (Amended) A method for manufacturing a color filter substrate according to Claim 52, further comprising a step of forming an opening portion in the reflective film.

[~~Claim 54~~] 54. (Amended) A method for manufacturing a color filter substrate according to Claim 49, wherein the insulating film is formed by vapor phase film-forming means.

[~~Claim 55~~] 55. (Amended) A method for manufacturing a color filter substrate, comprising:

a step of forming a color layer on a substrate;

a step of forming an insulating film on the color layer, the insulating film having a~~the~~ property of transmitting light , a refractive index of 1.6 to 2.0 in a~~the~~ visible wavelength region, and a thickness of 10 nm to 100 nm; and

a step of forming a conductive film on the insulating film; the conductive film having the property of transmitting light , a refractive index of 1.8 to 1.9 in the visible wavelength region, and a thickness of 100 nm to 300 nm.